

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A real-time monitoring apparatus for biochemical reaction, comprising:
 - a temperature control block comprising a thermoelectric element capable of supplying heat into reaction tubes and a heat transmission block which transmits the heat to the reaction tubes;
 - a light irradiation source comprising:
 - ~~a lamp which irradiates light with uniform intensity for irradiating~~ to a sample contained in at least one of the reaction tubes,
 - ~~a condensing lens at least one reflective mirror,~~
 - an optical waveguide which has an open structure with ~~a reflective mirror said reflective mirror, said optical waveguide having a configuration that alters light path at both ends passing through at least one end of the optical waveguide and provides a uniform intensity of light,~~
 - an infra-red cutting filter filtering light transmitted through a light path that comprises said infra-red cutting filter, said reflective mirror and the optical waveguide and said infra-red cutting filter cutting infra-red from the lamp and a selective transmission filter for transmitting light selectively to monitor a reaction progress,
 - said light illuminating the sample with a uniform light intensity distribution as provided by the uniform intensity of light from the optical waveguide, and
 - a condensing lens positioned outside of a portion of a light path comprising said reflective mirror, the optical waveguide and the infra-red cutting filter; and

an optical system comprising a receiving part for receiving fluorescence transmitted through the condensing lens, the fluorescence irradiated from the sample by the light emitted from the light irradiation source as transmitted through a light path comprising the optical waveguide, the selective transmission filter and the condensing lens.

2. (previously presented) The real-time monitoring apparatus according to claim 1, wherein the lamp includes a first ellipsoidal reflecting mirror or a parabolic mirror.

3. (original) The real-time monitoring apparatus according to claim 1, wherein the refractive index of medium of the optical waveguide is 1.35~2.0.

4. (original) The real-time monitoring apparatus according to claim 1, wherein the optical waveguide has a rectangular shape.

5. (previously presented) The real-time monitoring apparatus according to claim 1, wherein the cross-section of the optical waveguide has a round shape.

6-11. (canceled)

12. (currently amended) The real-time monitoring apparatus according to ~~claim 11~~ claim 1, further comprising two or more ~~second reflecting~~ reflective mirrors ~~which positioned to alter light path after transmission from the light irradiation source.~~

13-16. (canceled)

17. (previously presented) The real-time monitoring apparatus according to claim 2, wherein the lamp including an ellipsoidal reflecting mirror further comprises a focusing lens.

18. (canceled).